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First-time boost beats experience: The effect of past eligibility on turnout

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ABSTRACT

Recent findings from the US indicate a clear positive causal effect of past eligibility on voting in subsequent elections. Based on individual-level register data from four elections held in Denmark and Finland, we find that past eligibility either decreases voting propensity or has a zero effect among young voters. The hype associated with the first elections thus appears to cancel out the habit among young adults in countries where the institutional barriers against voting are weak. Moreover, differences across the types of elections can be noted. The negative effect of past eligibility is strongest in elections characterized by low saliency, implying that high-salient elections mobilize all voters equally and therefore narrow the gap between first and second-time eligible voters.

1. Introduction

A growing body of research on electoral participation suggests that an individual's first electoral experience matters. Analyses conducted in the US context have investigated the causal effect of past eligibility on voting in subsequent elections, either as a variable of interest per se or as an instrument of actual past voting. The results suggest that prior experience from elections increases participation, which is illustrated by a substantially higher turnout among voters eligible in past elections than among those facing their first elections (Dinas, 2010, 2012; Meredith, 2009). This seems plausible, given that voting appears to be a gradually acquired habit (Plutzer, 2002), and past eligibility may thus be associated with positive habitual/learning effects.

The central question of our research is whether the empirical pattern of a positive causal effect of second-time eligibility is universal. As Melton (2013) argues, the habit of voting may be much less important in the context of, for instance, the Nordic countries, which are characterized by lower institutional barriers, particularly due to automatic registration. While being entitled to vote for the first time can involve a certain amount of hype compared to eligibility the second time around in all contexts, this boost may be more important than the positive effect of experience in countries where the institutional requirements to vote are lower. In fact, several European studies show that first-time eligible voters[1] participate more actively compared to young voters, who were already eligible in previous elections (Bhatti and Hansen, 2012a; Bhatti et al., 2012; Konzelmann et al., 2012; Metje, 1991).[2] Although it is unclear whether this pattern reflects a negative *causal* effect, it raises the question of whether the positive effect of past eligibility among young voters is generalizable to all institutional contexts.

There are also indications that the effect of past eligibility might be sensitive to the type of elections in a given context. Franklin (2004, 130, 207–208) shows that the character of an individual's first election has a considerable influence on future participation. Highly competitive elections may be perceived as exciting and

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[1] We use the terms 'first-time eligible voters' and 'second-time eligible voters' to highlight the fact that these groups refer to the entire electorate in given elections, including both voters and non-voters.

[2] Recently this pattern has also been found in California (Bumb 2015: http://www.washingtonpost.com/blogs/the-fix/wp/2015/01/17/the-remarkable-california-turnout-curve/).

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0261-3794/

stimulating, which is particularly important for young adults, who are not yet established in their voting patterns. In the opposite case, i.e. in low-salience first elections, a negative learning experience might take place. This idea has been supported by Franklin and Hobolt (2011), who found that being eligible to vote for the first time in the elections for the European Parliament (EP), which are generally characterized by low saliency, has a negative effect for future electoral participation. Likewise, Dinas and Franklin (2013) have suggested that, in elections that are of lesser interest to voters, previous experience could be needed for participation.

In this study, we estimate the causal effect of past eligibility using individual-level register data from Denmark and Finland, two previously unexplored institutional contexts in this regard. Our datasets include detailed information about age and actual turnout in one Danish and three Finnish elections, which vary according to the saliency of prior and current elections. When examining past eligibility, the challenge is to separate its effect from other factors that influence turnout among young adults more generally. Applying the approach suggested by Meredith (2009), our analyses are based on a regression discontinuity design, which utilizes exogenous variation from voting-age restrictions in estimation of the causal effect. The idea is to compare the group of individuals who turned 18 shortly before the qualifying date for eligibility to vote in the most recent previous elections, namely second-time eligible voters in current elections, with those who turned 18 shortly after the previous elections, referred to as first-time eligible voters in current elections. Since these two groups can plausibly be assumed to vary only in relation to the treatment variable (past eligibility) under investigation, the treatment effect can be detected by comparing the turnout rates of these two groups.

Our analysis offers two main contributions to the study of voting among young adults. Firstly, and most importantly, we re-investigate the causal effect of past eligibility (and its flip-side, the first-time opportunity to vote) in new institutional contexts. This is particularly important since, to our knowledge, such an inquiry, based on the same stringent designs as those used in US studies, has not been carried out in other countries. The institutional setting of Denmark and Finland clearly differs from that of the US, especially in one particularly important respect, namely registration requirements, which likely affects the importance of habitual voting (Melton, 2013). Our context also differs in one other respect. The overall participation level of both Denmark and Finland is substantially higher than that of the US, though participation is more modest in Finland than in Denmark (Bhatti et al., 2012). In fact, turnout for even low-salience local elections is usually higher than that of presidential elections in the US. Our second contribution is related to the type of elections. In line with a few recent studies, we investigate the extent to which the effect of past eligibility varies across elections in the investigated context.

In the following, we first discuss in more detail the expectations, suggesting either a mobilizing effect of learning and positive habit acquisition from past eligibility or a first-time boost in turnout, which implies a lower voting propensity among second-time eligible voters. After introducing the institutional context of the study and research design, our empirical results are presented. We conclude by summarizing our findings and briefly discussing their implications.

2. First and second-time eligibility and implications for subsequent turnout

The relationship between age and turnout takes the shape of a roller-coaster (Bhatti and Hansen, 2012a). Participation is lowest among young adults in their early 20s, increases from then on, peaks among 60 to 70 year-olds and then declines in old age (Bhatti and Hansen, 2012b). The growth in turnout up until late middle age could be influenced by several factors, such as an increase in church attendance and level of involvement in the community and various organizations, stronger party attachment, more permanent residency, a more established family situation and increasing income (Strate et al., 1989, 444; Wolfinger and Rosenstone, 1980). One particularly interesting possibility for the present purpose is that participation increases as the habit of voting is gradually acquired (Plutzer, 2002), implying that habit (or lack hereof) is an important correlate of voting. As a concept, habitual voting suggests that an individual's propensity to vote in a given election is influenced by his/her past behavior (Green and Shachar, 2000, 562). Gerber et al. (2003, 540) refer to such persistence in voting as one of the most robust empirical findings in political science. In its strongest form, the habitual pattern can make voting almost involuntary, i.e. something that is done regardless of the context of the elections.

At least five mechanisms for understanding the process of habit formation have been suggested (Gerber et al., 2003, 548; Green and Shachar, 2000, 569–571). The first approach emphasizes the role of the political environment. Aldrich et al. (2011, 540) state that habitual voting can be perceived as a learned association between specific contextual cues and certain behavioral responses. For instance, coverage of elections in the media may activate participation. Their empirical analyses show that a stable context, operationalized by low residential mobility, is highly relevant for habit formation. The second potential account has to do with the fact that, when campaigning, political parties may have a higher tendency to target habitual voters than non-voters and first-time eligible voters (Gerber et al., 2003, 548; Green and Shachar, 2000, 569–571). However, it should be pointed out that these mobilization effects are relatively modest and vary considerably in individuals from one election to another. They can thus only cover a very limited part of the habit-formation process (Green et al., 2013). Thirdly, voting may have a re-enforcing effect on socio-psychological orientations, which further facilitates turnout, such as a sense of civic duty and an interest in politics. For instance, voting may motivate a person to follow politics more closely, which in turn may increase the propensity to participate in subsequent elections. Fourthly, participation boosts positive 'conative attitudes,' i.e. an individual's self-confidence in handling the practicalities associated with the voting process, and strengthens his/her self-image and identity as a voter. In addition to the factors mentioned above, there may be institutional barriers against voting for the first time, especially in the form of registration (Highton, 2004; Plutzer, 2002). When these institutional barriers have been overcome, the cost of voting decreases significantly, thereby enhancing persistence in subsequent behavior. Of these five mechanisms, socio-psychological orientations and institutional barriers are probably the most important (Melton, 2013).

Given the habitual character of voting, turnout is often expected to be lower among young adults participating for the first time as compared to slightly older adults who have had an opportunity to develop a voting habit. Such an expectation is supported by findings from US studies, which are based on strong causal designs. By utilizing aggregate-level voting records and natality files from California, Meredith (2009) found that eligibility in the 2000 presidential elections increased participation in the presidential elections of 2004 by 3.0–4.5 percent. Dinas (2010, 2012) showed even stronger effects based on data from the youth-parent socialization study by Jennings et al. (2005). Those young adults who had just reached the official voting age, namely 21, at the time of the 1968 presidential elections had a 17 percentage point higher propensity to vote in the 1970 congressional elections than their otherwise similar peers.

There may, however, also be good reasons to expect a negative

effect of past eligibility. As in many first-time experiences, there seems to be something special about the opportunity to vote for the first time. This notion has sometimes been labeled as the first-time boost (Konzelmann et al., 2012) or the first-time hype (Bhatti et al., 2012). The idea is that the psychological reward, thrill or simply entertainment value of voting (Toka, 2009) is particularly significant the first time an individual is eligible to vote. Reaching the official voting age may increase a young citizen's receptiveness to information concerning elections, both from the media and various socialization agents such as parents and friends. Consequently, though young adults may be more knowledgeable about voting during their second elections because of gained experience they could also be less enthusiastic about it because they are no longer exercising a newly gained right.

For recently enfranchised citizens, voting may actually be one of the first opportunities and duties that come with turning 18, along with conscription, being able to take a driver's license and being entitled to take loans. In this sense, first-time eligibility may increase expressive motivations to vote, whereas the expected positive effect of second-time eligibility is linked more to the instrumental dimension of voting via reduction in information costs. In addition, first-time voting may be a social act to a greater extent (Zuckerman, 2005), since the newly enfranchised young voters are expected to receive positive re-enforcement from family and friends (Plutzer, 2002, 43). Finally, second-time eligible young adults may have developed a habit of non-voting, in cases where their first elections were characterized by low saliency, which offers leverage for first-time eligible voters.

Whereas the results from the US suggested the opposite of this expectation, findings from several European countries seem to be aligned with it. It has been shown that turnout is considerably higher for first-time than for second-time eligible voters (Bhatti and Hansen, 2012a; Bhatti et al., 2012; Konzelmann et al., 2011; Metje, 1991). Since these studies do not utilize stringent designs to estimate the causal effect of prior voting, it is unclear whether the effect is causal or merely an artifact of a general decline in turnout among young voters in the countries under scrutiny. In fact, the age-turnout relationship could mask a positive causal effect of prior voting.

So, how can the results from the US context be reconciled with the descriptive patterns from Europe, and especially the Nordic countries? The existing US studies are based on sophisticated designs for making causal inference and utilize data of a high quality. Therefore, in our view there is very little reason to question these results as such. However, the US and Nordic institutional contexts are far from identical. Habit may be much less important in the Nordic countries, as the institutional barriers are significantly less important, while newly enfranchised voters face several challenges in the US since they need to find out where and how to register and, finally, where to vote.[3] It is important to note that while the registration process constitutes a strong barrier against voting, once completed it can also be seen as an investment for future participation.[4] In this sense, registration can contribute to habit formation. Likewise, even those who did not register are still probably better informed about the various requirements than young voters facing their first elections.

In the Nordic countries, polling cards are sent directly to all eligible voters at their current residential address, including information about their local voting station (often the local school or city hall) (Bengtsson et al., 2014). Therefore, in the Nordic countries the aforementioned aspect of habit formation could be considerably weaker. Such an expectation is supported by recent empirical evidence suggesting that the habitual element of voting is much lower in Sweden as compared to the US (Melton, 2013). Thus, it seems plausible that automatic registration and the ease of voting decreases the effect of the mechanism supposed to lead to higher turnout among second-time eligible voters (habit), while the effect of the mechanism working in the opposite direction (hype) should be similar in both contexts. Based on such reasoning and the observed peak in turnout among first-time eligible voters who just turned 18, we thus suggest that *past eligibility has a negative causal effect on voting among young adults* (H1). That is, the hype of the first elections is more important than habit-formation elements among young adults in the Nordic countries, who encounter few institutional barriers against voting.

Though our main purpose is to investigate the general effect of eligibility in a new context, it is also relevant to consider whether the effect differs across different types of elections, since a few recent studies suggest that this could be the case (Dinas and Franklin, 2013; Franklin and Hobolt, 2011). To address the issue in the remainder of this section, we use the notation t_1 when discussing the elections under investigation and t_0 to denote the previous election.

There are several reasons to expect that the character of both prior elections (t_0) and current elections (t_1) condition the causal effect of past eligibility on voting. Starting with the former case, previous studies have demonstrated that the salience of the first elections that an individual faces may influence his/her participation in subsequent elections. The logic is that in low-salience elections parties invest fewer resources in campaigning, the media coverage of the elections is lower and parties' issue positions are more difficult to piece together. All these factors may contribute to a less rewarding experience. This experience, in turn, expectedly has negative implications for the acquisition of a voting habit, which is potentially reflected in non-voting in subsequent elections (such as t_1). Utilizing a regression discontinuity design, Franklin and Hobolt (2011) showed that young adults who had their first opportunity to vote in the EP elections had a six percentage point lower estimated turnout compared to their peers who had their first voting experience in national elections. Similarly, using data from American National Election Studies (ANES) from 1954 to 2008, Dinas and Franklin (2013) demonstrated that individuals who were first eligible in low-salience mid-term elections had a lower propensity to vote in subsequent mid-term elections than voters who had been eligible in previous presidential elections.

Applying these findings to the present study, we expect low saliency of prior elections (t_0) to increase the negative effect of past eligibility. The reason for this is that prior elections (t_0) constitute the first experience for those who are second-time voters in current elections (t_1). First-time voters should be unaffected by the character of prior elections (t_0), as they only become eligible in current elections (t_1). We thus hypothesize that *the negative effect of past eligibility in current elections (t_1) is stronger when prior elections (t_0) were characterized by low saliency* (H2).

Also the character of current elections (t_1) can matter. Dinas and Franklin (2013) argue that resources are more important in low-salience elections than in high-salience elections, which may mobilize all types of voters. This feature may give the second-time voters an advantage relative to the first-time voters, as past eligibility can be considered such a resource. Due to past experience, voters who are eligible for the second time probably have more knowledge on parties and candidates and their platforms than first-

[3] Although same-day registration is allowed in some cases, it remains the exception to the general procedure.

[4] Naturally, a change of a residence often requires a renewal of registration. This might be particularly harmful for certain groups of voters (Highton, 2004, 508), such as young people, since they move more often due to education and job opportunities.

Table 1
Typology of the elections included in the study.

		Character of the current elections (t_1)	
		Low salience	High salience
Character of the prior elections (t_0)	low salience	(1) the 2009 Danish municipal elections (prior elections: the 2009 Danish EP elections)	(2) the 1999 Finnish parliamentary elections (prior elections: the 1996 joined Finnish municipal and EP elections)
	high salience	(3) the 2012 Finnish municipal elections (prior elections: the 2012 Finnish presidential elections)	(4) the 2012 Finnish presidential elections (prior elections: the 2011 Finnish parliamentary elections)

time voters. Furthermore, such experience should play a more significant role, when current elections (t_1) are perceived to be less important. This expectation has been supported empirically, as voters who were eligible for the first time in the US mid-term elections showed a lower turnout rate in subsequent mid-term elections but not in presidential elections (Dinas and Franklin, 2013). In addition, the impact of the first-time excitement may be less important in elections that are considered to involve 'less at stake'.[5] In line with this reasoning, we expect that *the negative effect of past eligibility is of smaller absolute magnitude in low-salience current elections (t_1)* (H3).

3. The context of the study

The countries under investigation, viz. Denmark and Finland, are characterized by a high and medium-high turnout, respectively. In Denmark, turnout in parliamentary elections is usually around 85 percent or higher, while the turnout for Finland is around 70 percent. Local and especially European Parliament elections, however, show considerably lower percentages.

For this analysis, we obtained data from one Danish and three Finnish elections, in order to examine the robustness of the analysis across different types of elections and to constitute each combination of high and low-salience prior and current elections. Saliency is here understood as characteristics associated with the type of election, indicated by their perceived importance among central actors and by turnout.[6] Consequently, high-salience and low-salience elections can be considered as equivalent to first and second-order elections, the former in most cases including parliamentary elections, and in some contexts presidential elections, and the latter local and EP elections (Reif and Schmitt, 1980). In all cases, prior and current elections immediately followed each other. Table 1 shows the elections under study, categorized according to their saliency.

Turnout varies substantially across these four current elections, reflecting their differences in saliency. The dataset covers the low-salience 2009 Danish municipal elections (cell 1 in Table 1), where turnout was 66 percent, and three Finnish elections (cells 2 to 4), namely the high-salience 1999 parliamentary elections (turnout 68%), the 2012 municipal elections (low-salience, turnout 58%) and the first round of the 2012 presidential elections (high salience, turnout 73%). In Denmark, prior elections in which the second-time voters were entitled to vote for the first time were the 2009 joint EP elections and Danish Act of Succession referendum with a turnout of 60 percent. In Finland, the corresponding elections were the joint municipal/EP elections of 1996 (cell 2, turnout 61%), the 2012 presidential elections (cell 3, turnout 73%) and the 2011 parliamentary elections (cell 4, turnout 71%). The time between current and prior elections in our dataset varies. The shortest gap found is for the 2012 Danish municipal elections, held only approximately five months after the EP elections. The longest interval occurred before the Finnish parliamentary elections of 1999, which were held almost 2.5 years after the previous elections.

To reiterate, our main expectation is that the effect of past eligibility in all four cells is negative (H1). Furthermore, the negative effect is expected to be strongest in the 2009 Danish municipal elections (cell 1) and the 1999 Finnish parliamentary elections (cell 2), since these two elections followed EP elections, which have previously been shown to decrease subsequent turnout (Franklin and Hobolt, 2011). While such elections are expected to influence the second-time eligible voters negatively by making the formation of a voting habit less likely, the salience of prior elections should not affect the first-time eligible voters as, by definition, they were not eligible in prior elections (H2). Finally, we expect the effect of past eligibility to be lower in the 2009 Danish municipal elections (cell 1) and the 2012 Finnish municipal elections (cell 3) than in the two other elections (cells 2 and 4) (H3). Both of these elections were of low salience, which should make the resources previously acquired by second-time voters more important and the magnitude of the first-time hype less pronounced.

4. Research design

In our empirical analyses, the causal effect of past eligibility is examined utilizing a regression discontinuity design (RDD). By comparing voters who had just become eligible at the time of the prior elections with those who had just missed the opportunity, we can estimate the causal impact of past eligibility (Dinas, 2010, 2012; Meredith, 2009).

The idea behind the RD design is to exploit a fixed cut-off to an underlying continuous variable in which individuals on each side of the cut-off or discontinuity vary in their treatment status. The strength of the design is based on the assumption that close to the discontinuity it is 'as if random' which treatment individuals received (i.e. on which side of the discontinuity they were located) (e.g., Angrist and Lavy, 1999; Gerber and Hopkins, 2011; Hahn et al., 2001; Olsen, 2011, 2012; Thistlethwaite and Campbell, 1960). Thus, the causal effect of the treatment can be estimated by comparing individuals on each side of the discontinuity.

For each election examined in our study, the discontinuity is situated at the point where an individual was eligible to vote in prior elections. In the Danish case, we are interested in the individual-level turnout in the elections held on November 17, 2009. The cut-off of interest relates to whether an individual was eligible in the 2009 EP elections held on June 7, 2009. Given that voters are required to turn 18 on the Election Day at the latest, the causal effect can be estimated by comparing those born just before or on June 7, 1991 with those born on June 8, 1991 or later. For the 1999 parliamentary elections held on March 21, 1999, for instance, the corresponding cut-off point is eligibility in the EP and municipal elections held on October 20, 1996. As in the Danish municipal

[5] However, it is also possible to consider the first-time excitement as a resource that becomes more valuable in low-salience elections.

[6] It should be noted that our classification is thus not sensitive to context-related nuances in the saliency of a given election. On the basis of the level of turnout and media coverage, Finnish presidential elections are classified as highly salient, although the prerogatives of the president have been reduced substantially.

elections, voters needed to turn 18 no later than Election Day. Consequently, we compare those born on October 20, 1988 or earlier with those born on October 21, 1988 or later.

While the present research design is used earlier to estimate the effect of eligibility (Dinas, 2010, 2012; Meredith, 2009), it should be noted that a potential downside of the design is that it is not entirely clear that individuals close to the discontinuity receive only one treatment. The problem is that those slightly older than the age required to qualify for eligibility to vote have voted before, whereas those who are slightly younger have not. However, individuals also vary according to the age at which they could potentially vote for the first time. For instance, those born on October 20, 1988 in Finland experienced their first elections at the age of 18, while those born on October 21 had to wait until they were six months past their 20th birthday for their first elections. If it is the case that a voter's age at the time of his/her first elections matters, as Franklin (2004) has suggested it does, this could constitute the second treatment. Consequently, we should be slightly cautious when interpreting the results.

For the 2009 Danish municipal elections, we have access to actual individual-level voting records of individuals from 44 municipalities through official voter lists (N = 2,336,760). After the elections, electoral registers were computerised manually by registering for each social security number, whether a person voted or not.[7] The data also contain the date of birth of each individual. Of the entire dataset, 11,973 were born in a plus/minus two month range from the cut-off date of interest, namely June 7, 1991.

The information for the three Finnish elections is based on individual-level register data compiled by Statistics Finland. The data cover the mainland Finnish electorate, excluding Åland. The voting information is collected from electoral wards and further linked with population registration data, using personal identification numbers. For all three samples used in this study, the data include an individual's age in months at the time of the elections in question and an indicator for whether the individual was eligible in prior elections. The dataset from the 1999 Finnish parliamentary elections consists of a 10 percent sample of all 18–30 year-olds voters (N = 80,699) and includes 2064 individuals who turned 18 within a plus/minus two month range from the date of the 1996 municipal/EP elections. Data from the 2012 municipal elections include 585,378 Finnish citizens and foreign residents entitled to vote. Altogether 3030 individuals became eligible within the plus/minus two month range around the first round of the 2012 presidential elections. Finally, the dataset from the first round of the 2012 Finnish presidential elections covers 286,107 voters of all ages, among whom 1575 turned 18 within plus/minus two months of the 2011 parliamentary elections.

5. Results

In order to test our first hypothesis, namely the negative effect of past eligibility, we begin by graphically illustrating the relationship between age and turnout in one week (the 2009 Danish municipal elections) or one month (the remaining three Finnish elections) increments. The data from Denmark are more detailed, since the exact birth date was available from Statistics Denmark, whereas for Finland only age in months was available. The red vertical line indicates the discontinuity, i.e. whether an individual was eligible in the prior elections. The expectation would be a significant break around the line, so that those to the left of the line (first-time eligible voters) have a higher turnout than those to the right of the red line (second-time eligible voters).

Figs. 1 and 3 lend support to a first-time boost, as they demonstrate a negative effect of past eligibility on current turnout, although there is some variation across elections. In general, turnout decreases with age among young Danes (see also Bhatti et al., 2012) in the 2009 municipal elections, but the drop seems to be particularly pronounced around the cut-off (about 5 percentage points, from about 60% to approximately 55%). In the 2012 Finnish municipal elections, the pattern is even clearer.[8] Turnout decreases by about 10 percentage points into the cut-off point, which seems to cover almost the entire decrease in turnout among young people. In Figs. 2 and 4, no clear decline in the point of the cut-off can be found (though there may be a modest decline in Fig. 2). On the other hand, a pattern showing an increase, which has been detected in the US context, is not clearly evident either. Altogether, the results are particularly interesting vis-à-vis the findings of Meredith (2009) and Dinas (2010, 2012), who discovered substantial positive effects of past eligibility.

The effects do appear to be sensitive to the character of the prior and current elections, but not in the way we expected. In line with Hypothesis 2, we find a negative effect of past eligibility in the 2009 Danish municipal elections, which followed low-salience elections (Fig. 1, corresponding to cell 1 in Table 1). However, the largest gap between first and second-time eligible voters is seen in the 2012 Finnish municipal elections (Fig. 3, corresponding to cell 3 in Table 1), which followed high-salience presidential elections. Also the findings concerning the character of the current elections are the opposite of what we expected. The strongest effects of past eligibility occurred in low-salience elections and not the other way around, as suggested by Hypothesis 3. This might be because high-salience elections mobilize all types of voters and therefore suppress the differences between first and second-time voters.

In Tables 2 and 3, the causal effects are estimated more formally. We begin by scrutinizing the 2009 Danish municipal elections (Table 2). In all ten models, individual-level turnout is treated as the dependent variable. The independent variable of interest is a dummy indicator denoting whether the individual was eligible in prior elections. In line with Fig. 1, a negative coefficient would support the first-time boost hypothesis. In models 1 to 4, we only examine close to the cut-off, varying the bandwidth from a half month to two months. In models 5 to 10, a larger sample that includes 18–19 year-olds and experimentation with different parametric specifications is utilized. The idea in models 5 to 10 is to include more data and allow for a varying degree of flexibility in our control for age, to ensure that we capture the effect of past eligibility per se and not age generally. In the table, age has been centered on the cut-off to facilitate interpretation of the interaction models. A zero measure on age indicates that the individual was born exactly 18 years prior to the 2009 EP elections.

Table 2 points to a negative effect of past eligibility, thus supporting the first-time boost hypothesis. In all models, the coefficient for past eligibility indicates negative influence. Departing from the local regressions (models 1–4), all coefficients are significant with an estimated effect of −5.3 to −6.1 percentage points. Similar effects are found in the parametric models. In models 5–7,

[7] Of all voters, 25 percent used a barcode on the polling card, and computerization was thus not necessary (Bhatti and Hansen, 2010).

[8] In the graph and the subsequent models for the 2012 municipal elections, we exclude all individuals born outside Finland. This is because the eligibility requirement is more lenient for immigrants in municipal as compared to parliamentary elections. In addition, a large proportion of young naturalized citizens gained citizenship after the 2012 presidential elections and were thus not eligible in those elections, although they were otherwise old enough to vote. If immigrants were included in the analysis, there would be a low level of noise in the eligibility variable, because it would simultaneously reflect age and immigrant status. However, the results are not sensitive to inclusion of all individuals.

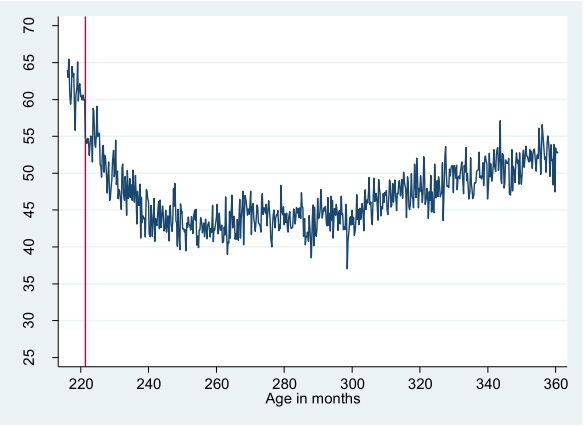

Fig. 1. The effect of past eligibility on turnout. The 2009 Danish municipal elections. Each data point is based on one week increments.

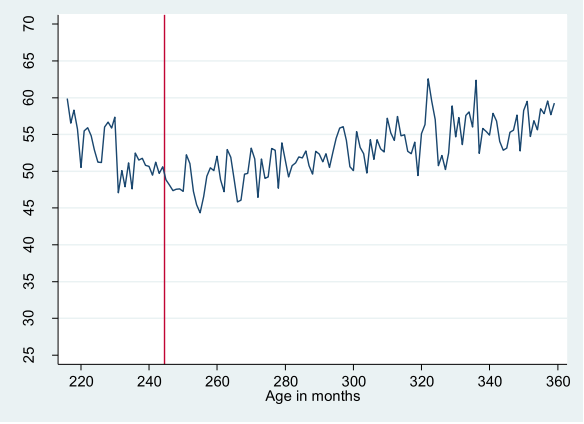

Fig. 2. The effect of past eligibility on turnout. The 1999 Finnish parliamentary elections. Each data point is based on month increments.

all estimated effects vary between −3.5 and −4.5 percentage points. When interactions are added to the specification in order to allow for different developments on each side of the cut-off, the corresponding effects are −3.9 and −4.4 percentage points, respectively (models 8–9). The main effect drops just below the 0.05 threshold in model 10 (estimated effect −3.1 percentage points), but a likelihood ratio test does not justify expanding the specification compared to model 9.

One important caveat is the fact that the relationship between age and turnout is not smooth everywhere, except at the discontinuity point. To examine the potential severity of this problem, we conducted placebo tests by re-estimating model 1 for faux cut-offs utilizing all birthdates (except for intervals that included the true cut-off) of those who were aged 18 or 19 at the time of the 2009 municipal elections.[9] We found significant discontinuities in 10.6 percent of the cases compared to our expectation of 5 percent, given the level of statistical significance applied (1.6% of the cases had z-values at 2.99, as found in model 1, or higher). Consequently, while it is clear that the effect of past eligibility is not positive, as it is in the US, we should be slightly more cautious about concluding a negative effect in Denmark than would be suggested based on the z-value.

[9] We included individuals turning 18 ± 15 days around the cut-offs to have 15 days of data on each side of the faux cut-offs.

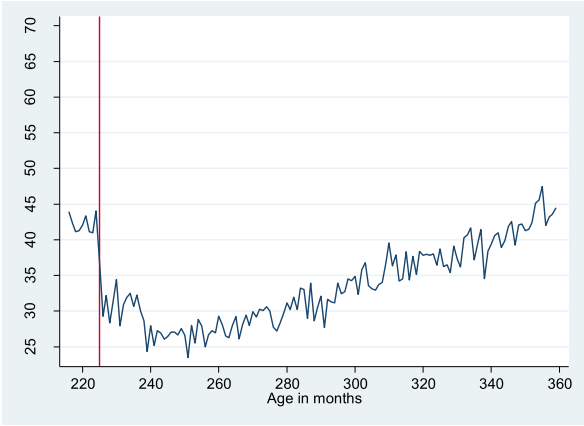

Fig. 3. The effect of past eligibility on turnout. The 2012 Finnish municipal elections. Each data point is based on month increments.

We repeat the models from Table 2 for the three Finnish elections. In the interest of saving space, only the coefficients for eligibility are shown in Table 3. The specifications are identical to those for Table 2. A difference, however, is that, since we only had access to the age of individuals in months and an indicator for eligibility, we ran regression on local samples which were ± 1 month, ± 2 months, ± 3 months and ± 4 months around the cut-off date. In the parametric regressions we take ± 1 year around the cut-off date (the interval of 18–19 year-olds is chosen, if those recently eligible are under 19) to get a two-year window, as in Table 2. As in the Danish case, age has centered on the cut-off (0 on age indicates that the individual was born exactly 18 years prior to the previous elections).

In the 1999 Finnish parliamentary elections, the dummy for past eligibility has a negative tendency in all models, but this is only significant in one model. The magnitude of the marginal effects is consistently about minus 2 percentage points (it varies between −1.0 percentage points and −2.9 percentage points across the ten models), i.e. the statistical insignificance is not only due to a lower sample size compared to the Danish municipal elections of 2009, for instance, but also to a lower point estimate for the effects. The results are still interesting, given that we do not find a positive effect, as one would expect based on the findings from the US context.

Turning to the 2012 Finnish municipal elections, the results are significant and highly consistent across specifications. In all models,

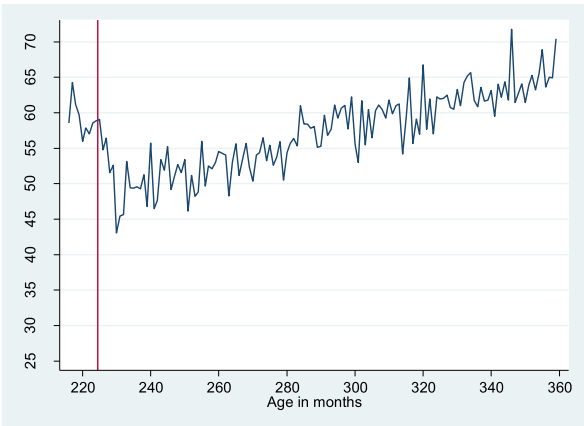

Fig. 4. The effect of past eligibility on turnout. The 2012 Finnish presidential elections (first round). Each data point is based on month increments.

Table 2
The effect of past eligibility on turnout in the 2009 Danish municipal elections.

	Local regressions				Parametric specifications (18–19-year-olds)					
	±½ month (1)	±1 month (2)	±1½ month (3)	±2 months (4)	(5)	(6)	(7)	(8)	(9)	(10)
Eligibility	−0.22**	−0.22***	−0.26***	−0.25***	−0.18***	−0.14***	−0.16***	−0.18***	−0.16**	−0.13
	(0.07)	(0.05)	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)	(0.04)	(0.05)	(0.07)
Age	–	–	–	–	−0.78***	−1.01***	−0.89***	−0.82*	−0.34	−4.48
					(0.05)	(0.17)	(0.20)	(0.35)	(1.39)	(3.43)
Age^2	–	–	–	–	–	0.41	−0.49	–	3.00	−61.53
						(0.29)	(0.81)		(8.39)	(49.59)
Age^3	–	–	–	–	–	–	1.33	–	–	−266.79
							(1.11)			(202.14)
Age x past elig.	–	–	–	–	–	–	–	0.03	−0.79	3.84
								(0.36)	(1.40)	(3.47)
Age^2 x past elig.	–	–	–	–	–	–	–	–	−2.40	60.03
									(8.39)	(49.64)
Age^3 x past elig.	–	–	–	–	–	–	–	–	–	269.24
										(202.15)
Constant	0.36***	0.40***	0.42***	0.42***	0.39***	0.37***	0.39***	0.39***	0.40***	0.35***
	(0.05)	(0.04)	(0.03)	(0.03)	(0.02)	(0.02)	(0.03)	(0.03)	(0.05)	(0.06)
N	2960	5954	8939	11,973	70,717	70,717	70,717	70,717	70,717	70,717
Pseudo R^2	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Log likelihood	−2023	−4056	−6084	−8148	−48,511	−48,510	−48,509	−48,511	−48,510	−48,508
Chi^2	9	17	38	45	879	881	883	879	882	885

*p < 0.05,**p < 0.01,***p < 0.001. The main coefficients are unstandardized logit coefficients with standard errors in parentheses. Past eligibility is a dummy variable denoting whether the individual was eligible (=1) or not (=0) in previous election. Age is measured in 1000 days, centered on the cut-off (0 is given to those who turned 18 exactly at the cut-off).

Table 3
The effect of past eligibility on turnout in the 2012 Finnish municipal elections.

	Local regressions				Parametric specifications (18–19-year-olds/±1 year)					
	±1 month	±2 months	±3 months	±4 months						
Eligibility coefficient for the 1999 parliamentary elections (cell 2)	−0.08	−0.07	−0.10	−0.09	−0.08	−0.08	−0.09	−0.04	−0.12*	−0.11
	(0.13)	(0.09)	(0.07)	(0.06)	(0.07)	(0.07)	(0.10)	(0.04)	(0.05)	(0.07)
Eligibility coefficient for the 2012 municipal elections (cell 3)	−0.41***	−0.48***	−0.45***	−0.50***	−0.40***	−0.45***	−0.55***	−0.42***	−0.58***	−0.39**
	(0.11)	(0.08)	(0.06)	(0.06)	(0.06)	(0.07)	(0.08)	(0.06)	(0.09)	(0.12)
Eligibility coefficient for the 2012 presidential elections (cell 4)	0.08 (0.14)	−0.04	−0.04	−0.09	−0.11	−0.06	0.04 (0.10)	−0.11	0.06 (0.12)	0.21
		(0.10)	(0.08)	(0.07)	(0.08)	(0.09)		(0.08)		(0.16)

*p < 0.05,**p < 0.01,***p < 0.001. The main coefficients are unstandardized logit coefficients with standard errors in parentheses. Past eligibility is a dummy variable denoting whether the individual was eligible (=1) or not (=0) in the last election. Age is measured in months, centered on the cut-off (0 is given to those who turned 18 exactly at the cut-off). The intervals for local regressions are 2, 4, 6 and 8 months, but they are not perfectly equally sized on both sides of the cut-offs as we only know whether the individuals were eligible and their age in whole months. For instance, in the 1999 parliamentary sample all 500 individuals who were 244 month-olds were eligible while 499 of the 514 individuals aged 245 were eligible. Thus, our ± 1 month interval contains those aged 244 and 245 months even thought this means that our sample is slightly larger for those younger than cut-off. As discussed in endnote 8, the 2012 municipal elections models contains only individuals with country of origin in Finland. The results, however, are robust to including all individuals.

we find a significant negative effect of past eligibility, which supports the first-time boost hypothesis. Marginal effects in the discontinuity point are between 9.0 and 12.9 percentage points in ten models. This corresponds nicely to the graphical representation in Fig. 3, where turnout drops from about 40 percent to around 30 percent at the cut-off date. As for the 2009 Danish municipal elections, we ran placebo tests with faux cut-offs (this time for each month instead of each day, because the age variable is less fine-grained) and found significant effects in about 5 percent of the points, discounting the true cut-off (in no cases was the t-value as extreme as at the true cut-off). Finally, for the 2012 Finnish presidential elections the effects are insignificant in all specifications, which is consistent with our graphical interpretation in Fig. 4. No clear trend in the results can be observed. In six specifications, the tendency is slightly negative, while it is slightly positive in the remaining four. This case thus lends the weakest support for the first-time boost expectation.

6. Conclusions

In this study, we have examined the causal effect of past eligibility on turnout, using a regression discontinuity design among young voters. Previous studies from the US context find a positive effect relatively unambiguously, which is possibly related to habit formation and learning (Dinas, 2010, 2012; Meredith, 2009). Using four large individual-level, register-based datasets from Denmark and Finland, we find a mainly negative impact of past eligibility on turnout. The findings point towards the validity of the first-time boost hypothesis, which suggests that the hype of the first elections overrides the experience acquired from the previous opportunity to vote. The results are not as clear-cut as for the US, however. While there was a clear negative tendency in three of the four elections, this was only statistically significant in two. Overall, the results suggest that the effect of past eligibility varies across countries and is mainly negative in the Nordic context.

Consequently, our study implies that understanding the effects of first and second-time eligibility may be more complex than has been previously recognized. Habit and learning may work in one direction and a first-time boost may work in the other. In Denmark and Finland, the latter causal mechanism seems to be the stronger of the two, resulting in a negative effect of past eligibility among young adults.

One explanation for this observed empirical pattern could be that voters face fewer and weaker institutional barriers against voting in the Nordic countries, because voters in the US have to register while European voters do not. Second-time voters in the US may already have invested in elections by registering the previous time around, significantly lowering the perceived costs of voting a second time. Though many young voters do not in fact register, they may still be more aware of the practical requirements associated with voting than voters facing their first elections. In Denmark and Finland, where all voters automatically receive a polling card by mail, first and second-time eligible voters do not differ from each other in this respect. Such an explanation would be in line with Melton (2013), who found that the habitual character of voting is less pronounced in Sweden compared to the US, due to institutional arrangements. Denmark and Finland also have higher participation rates than the US, although this difference should not necessarily influence the effect of past eligibility on voting.

While the results were in line with our expectations in terms of the overall effect, we did not find support for our hypotheses regarding differences across elections. Contrary to what was suggested in Hypothesis 2, no clear difference in the effects of low and high-salience prior elections could be detected. We did find support for the idea that the character of the current elections affects the importance of past eligibility, but in the opposite direction of what our hypothesis predicted. In fact, the negative effect of past eligibility was most pronounced in low-salience elections. While this result was somewhat surprising, it can be reconciled with the results of Dinas and Franklin (2013). One interpretation may be that high-salience elections are able to mobilize a broad variety of individuals, which, in turn, mitigates the individual-level differences. First-time excitement may be regarded as a resource, which is therefore more valuable when the saliency is low. Naturally, this conclusion is restricted by the fact that it is based on observations from only four elections. Thus, there is a need for further studies that examine whether the magnitude of the effects of past eligibility, as a general rule, increase in low-salience elections.

Finally, it should be noted that the results of this and other studies using a similar approach need to be treated with caution, due to the possibility that young adults turning 18 around the cut-off date receive multiple treatments. Young voters get their first chance to vote at different ages, sometimes in different types of elections, and have different prior experience of voting. Having said that, the findings from Denmark and Finland suggest that the effect of past eligibility is negative. At the same time, however, this eligibility effect is sensitive to the character of the elections.

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